CLAIMS

1. A method for detecting a gene that is influenced by an endocrine disruptor, characterized in which the method comprises:

preparing a nucleic acid sample containing mRNAs, or cDNAs therefor, derived from a cell, a tissue or an organism which has been exposed to a sample containing an endocrine disruptor;

hybridizing the nucleic acid sample with a DNA array onto which genes which are potentially influenced by the endocrine disruptor or DNA fragments derived from the genes which are potentially influenced by the endocrine disruptor are immobilized; and

selecting a gene that is influenced by the endocrine disruptor by comparing the results with results for a nucleic acid sample prepared using a control sample.

2. The method according to claim 1, wherein a gene selected from the group consisting of:

(1) a gene for a nuclear receptor or a gene related to nuclear receptor transcriptional coupling;

(2) a gene related to kinase-type signal transduction;

(3) a gene related to gonad differentiation;

(4) a gene for or related to a receptor-type

kinase;

(5) a gene for or related to an intermediate filament marker;

(6) a gene related to cell cycle or growth regulation;

(7) an oncogene, a gene related to an oncogene or a gene related to tumor suppression;

(8) a gene related to apoptosis;

(9) a gene related to damage response, repair or recombination of DNA;

(10) a gene for or related to a receptor;

(11) a gene related to cell death or differentiation regulation;

(12) a gene related to adhesion, motility or invasion of cell;

(13) a gene related to angiogenesis promotion;

(14) a gene related to cellular invasion;

(15) a gene related to cell-cell interaction;

(16) a gene for or related to a Rho family, GTPase or a regulator therefor; and

(17) a gene for or related to a growth factor or a cytokine,

or a DNA fragment derived from the gene is used.

Sub A2

3. A method for detecting an endocrine disruptor, characterized in which the method comprises

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measuring the expression of the gene detected by the method according to claim 1 or 2.

4. The method according to claim 3, wherein the endocrine disruptor is selected from ones classified into:

(1) dioxins;

(2) organochlorine compounds;

(3) phenols;

(4) phthalate esters;

(5) aromatic hydrocarbons;

(6) pesticides;

(7) organotin compounds;

(8) estrogens; or

(9) mirex, toxaphene, aldicarb or kepone.

5. A method for detecting a substance that potentially causes endocrine disruption, characterized in which the method comprises: C

preparing a nucleic acid sample containing mRNAs, or cDNAs therefor, derived from a cell, a tissue or an organism which has been exposed to a sample that is suspected to contain a substance that potentially causes endocrine disruption;

hybridizing the nucleic acid sample with a DNA array onto which genes which are influenced by an endocrine disruptor or DNA fragments derived from the genes which are influenced by the endocrine disruptor are immobilized; and

detecting a substance that potentially causes endocrine disruption by comparing the results with results for a nucleic acid sample prepared using a control sample.

6. The method according to claim 5, wherein the substance that potentially causes endocrine disruption is classified into:

(1) dioxins;

(2) organochlorine compounds;

(3) phenols;

(4) phthalate esters;

(5) aromatic hydrocarbons;

(6) pesticides;

(7) organotin compounds;

(8) estrogens; or

(9) mirex, toxaphene, aldicarb or kepone.

7. A DNA array for detecting a gene that is influenced by an endocrine disruptor, onto which a gene that is influenced by an endocrine disruptor or a gene that is potentially influenced by an endocrine disruptor, or a DNA fragment derived from the gene is immobilized.

8. The DNA array according to claim 7, onto which a gene selected from the group consisting of:

(1) a gene for a nuclear receptor or a gene related to nuclear receptor transcriptional coupling;

(2) a gene related to kinase-type signal

transduction;

(3) a gene related to gonad differentiation;

(4) a gene for or related to a receptor-type kinase;

(5) a gene for or related to an intermediate filament marker;

(6) a gene related to cell cycle or growth regulation;

(7) an oncogene, a gene related to an oncogene or a gene related to tumor suppression;

(8) a gene related to apoptosis;

(9) a gene related to damage response, repair or recombination of DNA;

(10) a gene for or related to a receptor;

(11) a gene related to cell death or differentiation regulation;

(12) a gene related to adhesion, motility or invasion of cell;

(13) a gene related to angiogenesis promotion;

(14) a gene related to cellular invasion;

(15) a gene related to cell-cell interaction;

(16) a gene for or related to a Rho family, GTPase or a regulator therefor; and

(17) a gene for or related to a growth factor or a cytokine,

or a DNA fragment derived from the gene is immobilized.

9. The DNA array according to claim 7 or 8, wherein the gene or the DNA fragment derived from the gene is immobilized onto a slide glass.